


# S3A - S3M

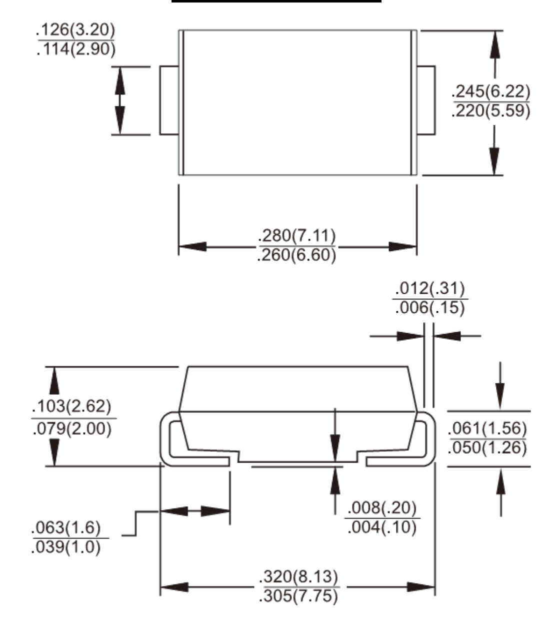
3.0AMPS Surface Mount Rectifiers

**SMC/DO-214AB**










**Dimensions in inches and (millimeters)**

## Features

- For surface mounted application
- Glass passivated chip junction
- Low forward voltage drop
- High current capability
- Easy pick and place
- High surge current capability
- Plastic material used carries Underwriters Laboratory Classification 94V-0
- High temperature soldering: 260℃/10 seconds at terminals
- Qualified as per AEC-Q101
- Green compound with suffix "G" on packing code & prefix "G" on datecode

## Mechanical Data

- Case: Molded plastic
- Terminals: Pure tin plated, lead free
- Polarity: Indicated by cathode band
- Packing: 16mm tape per EIA STD RS-481
- Weight: 0.21 grams

**Marking Diagram**




S3X = Specific Device Code
G = Green Compound
Y = Year
M = Work Month

## Maximum Ratings and Electrical Characteristics

Rating at 25 ℃ ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

| Type Number | Symbol | S3A | S3B | S3D | S3G | S3J | S3K | S3M | Unit |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Repetitive Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS Voltage | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC Blocking Voltage | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum Average Forward Rectified Current @TL=105℃ | $I_{F(AV)}$ | 3 | | | | | | | A |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) | $I_{FSM}$ | 100 | | | | | | | A |
| Maximum Instantaneous Forward Voltage (Note 1) @ 3 A | $V_F$ | 1.15 | | | | | | | V |
| Maximum Reverse Current @ Rated VR $T_A$=25 ℃<br>$T_A$=125 ℃ | $I_R$ | 10<br>250 | | | | | | | uA |
| Maximum Reverse Recovery Time (Note 2) | Trr | 1.5 | | | | | | | uS |
| Typical Junction Capacitance (Note 3) | Cj | 60 | | | | | | | pF |
| Typical Thermal Resistance | $R_{\theta jA}$<br>$R_{\theta jL}$ | 47<br>13 | | | | | | | $^{o}$C/W |
| Operating Temperature Range | $T_J$ | - 55 to + 150 | | | | | | | $^{o}$C |
| Storage Temperature Range | $T_{STG}$ | - 55 to + 150 | | | | | | | $^{o}$C |

Note 1: Pulse Test with PW=300 usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Conditions: $I_F$=0.5A, $I_R$=1.0A, $I_{RR}$=0.25A

Note 3: Measured at 1 MHz and Applied Reverse Voltage of 4.0V D.C.




# RATINGS AND CHARACTERISTIC CURVES (S3A THRU S3M)

FIG.1 FORWARD CURRENT DERATING CURVE

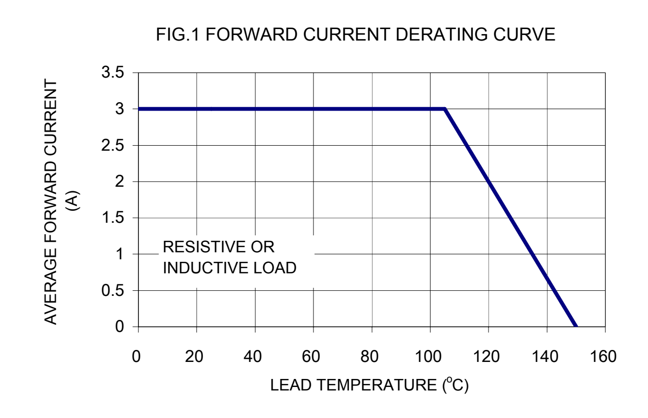



FIG. 2 TYPICAL REVERSE CHARACTERISTICS

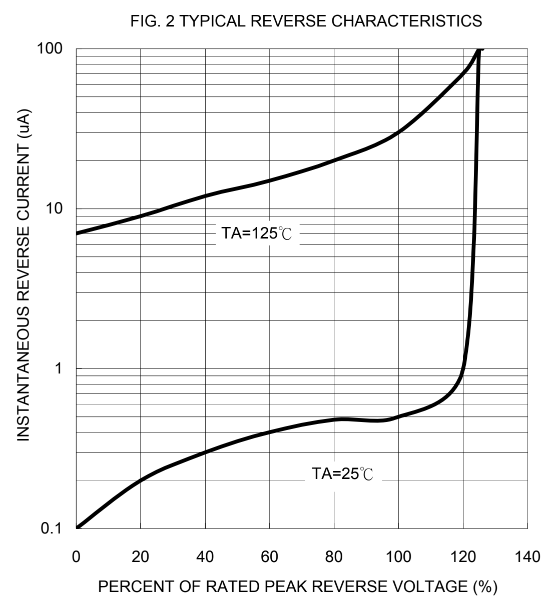
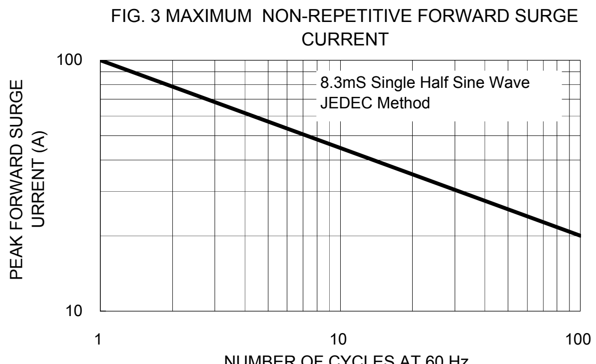



FIG. 3 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



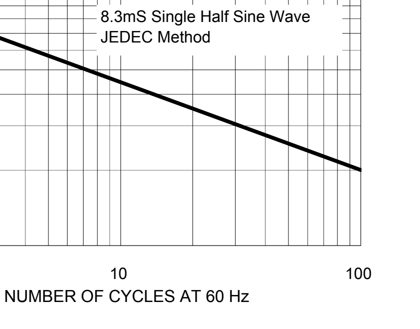



FIG. 5 TYPICAL FORWARD CHARACTERISRICS

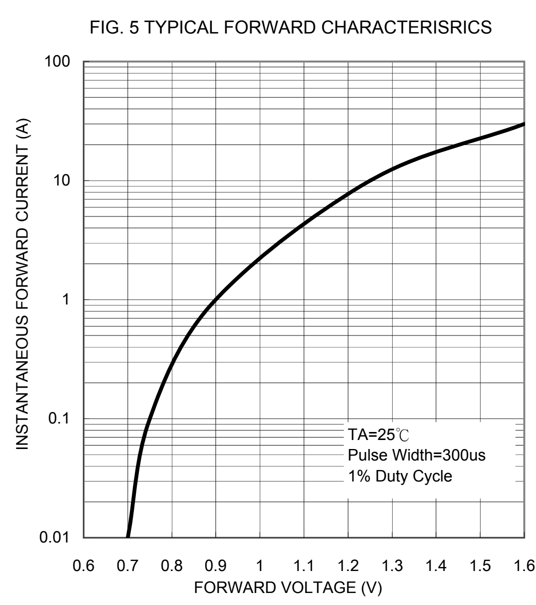



FIG. 4 TYPICAL JUNCTION CAPACITANCE

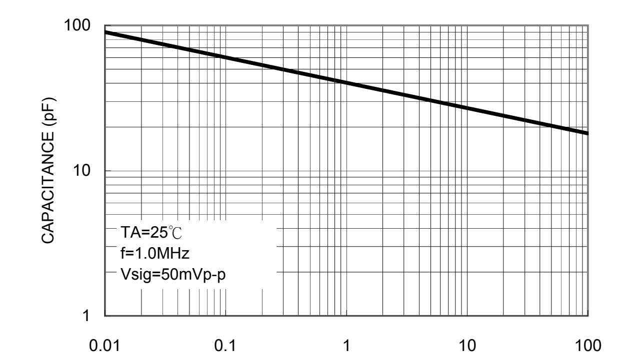
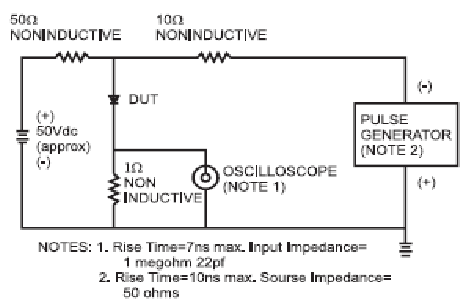



FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM




trr
+0.5A
0
-0.25A
-1.0A
1cm
SET TIME BASE FOR
5/ 10ns/ cm